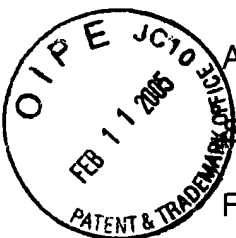


*1 Feb 05*

Rev. 03/05/04

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



Applicants: Donna L. Robinson

Docket No.: S-100,543

Serial No.: 10/656,358

Examiner: N. J. Panaro

Filed : 9/4/2003

Art Unit: 1753

For : IMPROVED METHODS FOR SEQUENCING GC-RICH AND CCT REPEAT DNA TEMPLATES

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 CFR 1.56, 1.97, AND 1.98**

Sir:

The Information Disclosure Statement submitted herewith is being filed after the mailing date of a first Office Action on the merits but before the mailing date of either:

1. a Final Action under 37 CFR 1.113, or
2. a Notice of Allowance under 37 CFR.

Accordingly, applicants request consideration of the Information Disclosure

Statement under the provisions of 37 CFR 1.97(c)(2). The fee required under 37 CFR 1.17(p) is being paid herewith.

---

**CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))**

I hereby certify that this correspondence is, on the date shown below, being:

**MAILING**

☒ deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the:  
Commissioner for Patents, P. O. Box 1450,  
Alexandria, VA 22313-1450.

**FACSIMILE**

☐ transmitted by facsimile to the  
United States Patent and Trademark Office.

Date

2/9/05

Signature

Sharon Ruminer

Sharon Ruminer  
(type or print name of person certifying)

02/15/2005 ACQND2F1 00000122 122150 10636350

01 FC:1606 180.00 DA

The documents listed below are identified in compliance with the duty of disclosure defined in 37 CFR 1.56. Copies are attached as appropriate.

1. U.S. Pat. No. 5,171,534;
2. U.S. Patent No. 5,075,216
3. U.S. Pat. No. 5,614,365.
4. WO 98/13523
5. European Patent No. 0 655 506 A1;
6. Product insert/literature: "GC-RICH PCR System", Roche Diagnostics GmbH
7. Kumari and Anji, 2001, "Sequencing Through GC-rich and AT-rich Sequences with the SequiTherm™ EXCEL™ II DNA Sequencing Kit" Epicentre Technologies technical journal 8(3): 9.
8. Grunenwald, 2002, "Unlike Other PCR Products, the FailSafe PCR System Amplifies a GC-Rich Template and a 20-Kb Template on the first Try" Epicentre Technologies technical journal 9(3):3.
9. Sequencing Protocol, Epicentre Technologies, "SequiTherm EXCEL™ II DNA Sequencing Kit-LC, for 25-41cm gels.
10. Sequencing Protocol, Epicentre Technologies, "SequiTherm EXCEL™ II DNA Sequencing Kit-LC, for 66 cm gels.
11. Epicentre Technologies, "Tech Tips: SequiTherm™ Cycle Sequencing Kit for Manual Sequencing of DNA.
12. Chakrabarti and Schutt, 2001, "The enhancement of PCR amplification by low molecular-weight sulfones" Gene 274:293-298.
13. Majlingova et al., 2003, "Successful PCR amplification and subcloning of a GC-rich DNA fragment" Qiagen news 1: 18-19.
14. Web pages concerning DNA Sequencing Trouble-Shooting: Sequencing GC Rich Regions and Hairpins.

15. Product information concerning 7-Deaza-dGTP, Roche Applied Science 2003/2004.
16. Sanger et al., 1977, Proc. Natl. Acad. Sci. U.S.A., 74: 5463.
17. Sanger et al., 1980, J. Mol. Biol., 143:161-78;
18. Schreier et al., 1979, J. Mol. Biol., 129:169-72;
19. Smith et al., 1985, Nucleic Acids Research, 13:2399-2412;
20. Smith et al., 1987, Nature, 321:674-79;
21. Prober et al., 1987, Science, 238:336-41;
22. 1987, Section II, Meth. Enzymol., 155:51-334;
23. Church et al., 1988, Science, 240:185-88;
24. Swerdlow et al., 1989, Nucleic Acids Research, 18: 1415-19;
25. Ruiz-Martinez et al., 1993, Anal. Chem., 2851-58;
26. Studier, 1989, PNAS, 86:6917-21;
27. Kieleczawa et al., Science, 258:1787-91;
28. Connell et al., 1987, Biotechniques, 5:342-348;
29. Maxam et al., 1977, Proc. Natl. Acad. Sci. USA, 74:560-564;
30. Smith et al., 1986, Nature 321:674-679.
31. Lee et al., 1992, Nucleic Acid Research 20:2471;
32. Murray, 1989, Nucleic Acids Research 17:8889;
33. Burgett et al., 1994, In: Automated DNA Sequencing and Analysis, ed. Adams et al., Academic Press, San Diego, CA, pp. 211-215;
34. Landre et al., 1995, In: PCR Strategies, ed. Innis et al., Academic Press, San Diego, CA, pp. 3-16;
35. Henke et al., 1997, Nucleic Acids Res. 25:3957-3958;
36. Baskaran et al., 1996, Genome Res. 6: 633-638;
37. Innis, 1990, In: PCR Protocols: A Guide to Methods and Applications, ed. Innis et al., Academic Press, San Diego, CA, pp. 54-59;
38. Fernandez-Rachubinski et al., 1990, DNA Seq. 1: 137-140;
39. Automated DNA Sequencing, Chemistry Guide (Applied Biosystems Inc., 2000);

40. Tabor and Richardson, 1995, Proc. Natl. Acad. Sci. USA 92: 6339-6343;

41. Ewing and Green, 1998, Genome Research 8: 186-194;

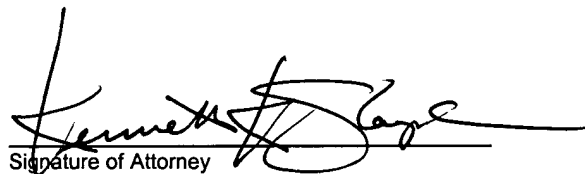
42. Ewing et al., 1998, Genome Research 8: 175-185.

This Information Disclosure Statement is not to be construed as a representation that a search has been made or that additional matter material to the examination of this application does not exist. Applicant does not believe that any of these citations constitutes prior art under 35 U.S.C. 102.

It is requested that the above citations be made of record in the prosecution of this application.

Respectfully submitted,

Date: 02/09/05

  
Signature of Attorney

Reg. No. 35,355  
Phone (505) 667-0304

Kenneth K. Sharples  
Los Alamos National Laboratory  
LC/IP, MS A187  
Los Alamos, New Mexico 87545

<sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO				<i>Complete if Known</i>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				Application Number	10/656,358
				Filing Date	09/04/2003
				First Named Inventor	Donna L. Robinson
				Art Unit	1753
				Examiner Name	N. J. Panaro
Sheet	2	of	5	Attorney Docket Number	S-100,543

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published (when known)	T <sup>2</sup>	
	6	Product insert/literature: "GC-RICH PCR System", Roche Diagnostics GmbH		
	7	Kumari and Anji, 2001, "Sequencing Through GC-rich and AT-rich Sequences with the SequiTherm™ EXCEL™ II DNA Sequencing Kit" Epicentre Technologies technical journal 8(3): 9.		
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	11	Epicentre Technologies, "Tech Tips: SequiTherm™ Cycle Sequencing Kit for Manual Sequencing of DNA.		
	12	Chakrabarti and Schutt, 2001, "The enhancement of PCR amplification by low molecular-weight sulfones" Gene 274:293-298.		
	13	Majlingova et al., 2003, "Successful PCR amplification and subcloning of a GC-rich DNA fragment" Qiagen news 1: 18-19.		
	14	Web pages concerning DNA Sequencing Trouble-Shooting: Sequencing GC Rich Regions and Hairpins.		
	15	Product information concerning 7-Deaza-dGTP, Roche Applied Science 2003/2004.		
Examiner Signature			Date Considered	

<sup>1</sup> Applicant's unique citation designation number (optional).

T<sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO				<div style="text-align: right;"><i>Complete if Known</i></div>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				Application Number	10/656,358
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Sheet	3	of	5	Attorney Docket Number	S-100,543

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published (when known)	T <sup>2</sup>
	16	SANGER et al., 1977, Proc. Natl. Acad. Sci. U.S.A., 74: 5463.	
	17	SANGER et al., 1980, J. Mol. Biol., 143:161-78;	
	18	SCHREIER et al., 1979, J. Mol. Biol., 129:169-72;	
	19	SMITH et al., 1985, Nucleic Acids Research, 13:2399-2412;	
	20	SMITH et al., 1987, Nature, 321:674-79;	
	21	PROBER et al., 1987, Science, 238:336-41;	
	22	1987, Section II, Meth. Enzymol., 155:51-334;	
	23	CHURCH et al., 1988, Science, 240:185-88;	
	24	SWERDLOW et al., 1989, Nucleic Acids Research, 18: 1415-19;	
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	26	STUDIER, 1989, PNAS, 86:6917-21;	
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				First Named Inventor	Donna L. Robinson
				Art Unit	1753
				Examiner Name	N. J. Panaro
Sheet	4	of	5	Attorney Docket Number	S-100,543

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	27	KIELECZAWA et al., Science, 258:1787-91;	
	28	CONNELL et al., 1987, Biotechniques, 5:342-348;	
	29	MAXAM et al., 1977, Proc. Natl. Acad. Sci. USA, 74:560-564;	
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	32	MURRAY, 1989, Nucleic Acids Research 17:8889;	
	33	BURGETT et al., 1994, In: Automated DNA Sequencing and Analysis, ed. Adams et al., Academic Press, San Diego, CA, pp. 211-215;	
	34	LANDRE et al., 1995, In: PCR Strategies, ed. Innis et al., Academic Press, San Diego, CA, pp. 3-16;	
	35	HENKE et al., 1997, Nucleic Acids Res. 25:3957-3958;	
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	37	INNIS, 1990, In: PCR Protocols: A Guide to Methods and Applications, ed. Innis et al., Academic Press, San Diego, CA, pp. 54-59;	
Examiner Signature			Date Considered

<sup>1</sup> Applicant's unique citation designation number (optional).

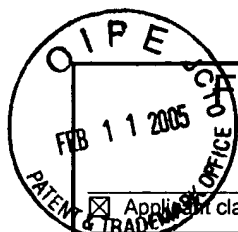
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	39	Automated DNA Sequencing, Chemistry Guide (Applied Biosystems Inc., 2000);	
	40	TABOR AND RICHARDSON, 1995, Proc. Natl. Acad. Sci. USA 92: 6339-6343;	
	41	EWING AND GREEN, 1998, Genome Research 8: 186-194;	
	42	EWING et al., 1998, Genome Research 8: 175-185.	
Examiner Signature			Date Considered

<sup>1</sup> Applicant's unique citation designation number (optional).

T<sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.



# **FREE TRANSMITTAL** For FY 2005

Patent fees are subject to annual revision

☒ Applicant claims small entity status. See 37 CFR 1.27

**TOTAL AMOUNT OF PAYMENT: \$**

## **Complete if Known**

Application Number:	10/656,358
Filing Date:	9/4/2003
First Named Inventor:	Donna L. Robinson
Examiner Name:	N. J. Panaro
Group/Art Unit:	1753
Attorney Docket No.:	S-100,543

## **METHOD OF PAYMENT (check all that apply)**

1. ☒ The commissioner is hereby authorized to charge indicated fees and credit any over payments to:  
Deposit Account Number: **12-2150**  
Deposit Account Name: Los Alamos National Laboratory  
☒ Charge Any Additional Fee Required Under 37 C.F.R. 1.16 and 1.17

## **FEE CALCULATION**

### **1. COMBINED FILING FEE**

Large Entity Fee	Small Entity Fee	Fee Description	Fee Paid
1001 \$300	2001 \$150	Basic Filing fee	\$150.00
1004 \$300	2004 \$150	Reissue Filing fee	\$
1111 \$500	2111 \$250	Search Fee	\$250.00
1311 \$200	2311 \$100	Examination Fee	\$100.00
1005 \$200	2005 \$100	Provisional Filing Fee	
1085 \$250	2085 \$125	Provisional Size Fee	

(for each additional 50 sheets that exceeds 100 sheets)

**SUBTOTAL (1) \$500.00**

### **2. EXTRA CLAIM FEES/APPLICATION SIZE FEE**

Total Claims	Extra Claims	Fee from Fee Paid Below	
-20** =	X	=	\$
Independent Claims	-3** =	X	=
Multiple Dependent	X 180	=	\$

\*\* or number previously paid, if greater; For Reissues, see below

Large Entity Fee	Small Entity Fee	Fee Description
1202 \$50	2202 \$25	Claims in excess of 20
1201 \$200	2201 \$100	Independent claims in excess of 3
1203 \$360	2203 \$180	Multiple dependent claim, if not paid.
1204 \$88	2204 \$44	** Reissue independent claims over original patent
1205 \$18	2205 \$9	** Reissue claims in excess of 20 and over original patent

### **APPLICATION SIZE FEE**

Large Entity Fee	Small Entity Fee	Fee Description
1081 \$250	2081 \$125.00	For each additional 50 sheets that exceed 100 sheets, including specification and drawings

**SUBTOTAL (2) \$**  
(Include total of Claims Fees and Size Fee here)

## **FEE CALCULATION (continued)**

### **3. ADDITIONAL FEES**

Large Entity Fee Code	Small Entity Fee Code	Fee Description	Fee Paid
1051 \$130	2051 \$65	Surcharge - late filing fee or oath	
1052 \$50	2052 \$25	Surcharge - late provisional filing fee or cover sheet	
1812 \$2520	1812 \$2520	For filing a request for reexamination	
1251 \$120	2251 \$60	Extension for reply within first month	
1252 \$450	2252 \$225	Extension for reply within second month	
1253 \$1020	2253 \$510	Extension for reply within third month	
1254 \$1590	2254 \$795	Extension for reply within fourth month	
1255 \$2160	2255 \$1080	Extension for reply within fifth month	
1401 \$500	2401 \$250	Notice of Appeal	
1402 \$500	2402 \$250	Filing a brief in support of an appeal	
1403 \$1000	2403 \$500	Request for oral hearing	
1452 \$500	2452 \$250	Petition to revive - unavoidable	
1814 \$110	2814 \$55	Terminal Disclaimer	
1453 \$1500	2453 \$750	Petition to revive - unintentional	
1460 \$130	2460 \$130	Petitions to the Director	
1806 \$180	2806 \$180	Submission of Information Disclosure Statement	180.00
1809 \$790	2809 \$395	Filing a submission after final rejection (37 CFR 1.129 (a))	
1810 \$790	2810 \$395	For each additional invention to be examined (37 CFR 1.129(b))	
1811 \$100	2811 \$100	Certificate of Correction	
1504 \$300	2504 \$300	Publication fee for early, voluntary, or normal publication/Republication fee	
1801 \$790	2801 \$395	Request for Continued Examination (RCE)	

Other fee (specify) \_\_\_\_\_

**SUBTOTAL (3)**

\$

Reduced by Basic Filing Fee Paid

**SUBTOTAL FROM 1**

\$

**SUBTOTAL FROM 2**

\$

**SUBTOTAL FROM 3**

\$180.00

**TOTAL AMOUNT OF PAYMENT**

\$180.00

(Enter total amount at top of page)

## **SUBMITTED BY**

## **Complete (if applicable)**

Printed Name: Ray G. Wilson

Reg. No. 28,351

Signature: *Ray G. Wilson*

Date: 2/9/05

Telephone (505) 665-3112